

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Amendment of Parts 73 and 74 to Improve the) **MB Docket No. 19-193**
Low Power FM Radio Service Technical Rules)
) **MB Docket No. 17-105**
Modernization of Media Regulation Initiative)

To: The Commission (*filed electronically in ECFS*)

**COMMENTS OF CALIFORNIA STATE UNIVERSITY,
LONG BEACH RESEARCH FOUNDATION (KKJZ)**

1. California State University, Long Beach Research Foundation (“CSULBRF”) hereby submits its Comments in response to the Commission’s *Notice of Proposed Rulemaking* (“NPRM”) in the above-captioned proceeding.¹ CSULBRF is the licensee of noncommercial educational FM station KKJZ, Facility ID 8197, Long Beach, CA. KKJZ operates on 88.1 MHz, FM Channel 201, immediately adjacent to the Channel 6 television band.² CSULBRF’s comments are directed at the Commission’s proposal to sunset Section 73.525 of its Rules in 2021,³ thereby eliminating all regulation of the technical relationship between FM radio and TV Channel 6. CSULB urges the Commission not to adopt that proposal.

2. The proposal to sunset Section 73.525 goes beyond the basic subject matter of this proceeding – improving the technical rules for Low Power FM (“LPM”) stations. The proposal is based on an assumption that the likelihood of interference between FM stations and TV stations

¹ 34 FCC Rcd. 6537, FCC 19-94, 84 Fed. Reg. 49205 (2019).

² The TV Channel 6 frequency band is 82-88 MHz.

³ NPRM at ¶¶ 8-13.

is substantially reduced now that most TV stations have transitioned to a digital format and will disappear entirely when the digital transition has been completed for Low Power Television (“LPTV”) stations in 2021. Past studies do not support such a blanket conclusion. Moreover, neither the existing rule nor the proposed sunset take into account interference in the other direction – by TV stations to FM stations. If the Commission is going to address the FM-TV6 issue, it should address the entire issue rather than just a part.

3. CSULBRF disagrees with any blanket conclusion that the potential for harmful interference will disappear in 2021. It does not dispute that the probability of interference will be reduced if there are no more analog TV stations, at least to the extent that it may no longer be necessary to retain Channel 6 protection constraints on FM stations above Channel 205 rather than all the way up to Channel 220. But whatever degree of immunity digital TV receivers may or may not have from interference from adjacent-channel FM stations, it is not the case that FM radio receivers are equally immune from interference from digital TV signals. Beyond that, it is well-known, from extensive *ex parte* presentations in MB Docket No. 03-185,⁴ that Channel 6 LPTV licensees are pushing hard to retain the ability to transmit analog audio signals even if they are required convert their video services to digital.⁵

4. In effect, a Channel 6 analog audio signal is the equivalent of an FM radio station on 87.7 MHz. It behaves the same way as a second-adjacent radio station; and if the bandwidth is

⁴ See, e.g., the report of an *Ex Parte* Presentation filed on June 10, 2019, by Venture Technologies Group, Inc. *et al.*

⁵ CSULBRF takes no position on the merits of the proposal to allow digital Channel 6 LPTV stations to add an analog audio carrier. The point of these Comments is to address the need for appropriate rules to protect FM stations from interference, not to suggest what technical formats TV stations should be permitted to use.

increased, including if a hybrid IBOC signal component is added to either the TV audio channel or the FM radio channel, it becomes the equivalent of a first-adjacent FM radio station, with similar interference potential.⁶ The Commission's current rules ignore this potential for interference, which is particularly objectionable since with no rule on the books, LPTV stations are left free to propose facilities that are predicted to cause significant interference to primary service FM radio stations, even though LPTV is a secondary service.

5. It is most unusual for the Commission to ignore interference between services in adjacent frequency bands, especially where there is no guard band to isolate the signals. *See, e.g.*, Sections 74.709 and 74.702(b) of the Commission's Rules, requiring LPTV stations to protect adjacent-channel land mobile stations.⁷ If the Commission is going to examine the relationship between FM radio and Channel 6 TV, there is no logical justification for not imposing sensible interference protection requirements on LPTV stations operating on Channel 6.

6. The interference problem is exacerbated by the fact that LPTV stations are exempt from Section 73.682(a)(15) of the Commission's Rules, which would otherwise limit the effective radiated power of an LPTV aural transmitter to 22% of the peak radiated power of the visual

⁶ The interference potential is increased by the fact that TV emission masks allow wider bandwidth emissions than the FM radio emission mask. *See* Exhibit 1 to these Comments.

⁷ A typical condition on an LPTV construction permit for TV Channel 14, which sits immediately adjacent to the heavily used 450-470-MHz land mobile band is: "During equipment tests, authorized by Section 73.1610 of the Commission's Rules, the permittee shall take adequate measures to identify and substantially eliminate objectionable interference which may be caused to existing land mobile radio facilities in the 460 to 470 MHz band. Documentation that objectionable interference will not be caused to existing land mobile radio facilities shall be submitted along with the request for Program Test Authority. Program tests shall not be commenced under Section 73.1620(a) of the Commission's Rules and may only be started after specific authority is granted by the Commission. An application for a license must be filed within 10 days after the start of program tests." LPTV stations on Channel 14 generally install special sharply tuned filters to suppress adjacent channel emissions. No such condition is imposed on Channel 6 LPTV construction permits, but it should be.

transmitter. The Commission licenses only one effective radiated power level to each LPTV station; but Channel 6 stations are permitted to use separate visual and aural transmitters and can load 90% or more of their licensed power into their aural signal, making that signal much stronger, with more interference potential, than would be expected if the 22% rule applied. CSULBRF takes no position with regard to whether a separate aural power limit should be applied to LPTV stations; but interference calculations should take actual aural power into account, which means that aural power should be separately disclosed by the LPTV licensee, reviewed during application processing, and specified as part the LPTV license.

7. The NPRM cites studies by National Public Radio (“NPR”) indicating that when TV stations convert to digital technology, interference from FM radio stations is diminished.⁸ Those studies do not, however, show that interference is eliminated; indeed, interference remains and can still be substantial at the lower end of the noncommercial FM radio band.⁹ Moreover, the Commission has recognized that LPTV stations are secondary and must protect primary NCE stations;¹⁰ yet it has ignored the problem in its Rules.

8. The problem of interference from Channel 6 TV stations to NCE FM stations can be severe. One example is LMS File No. 0000074825, where, because LPTV stations are not required

⁸ NPRM at fn. 43, 44.

⁹ See the NPR report referred to in comments by America’s Public Television Stations et al. in ET Docket 10-235 on March 18, 2011. The link in those comments to the NPR Report is no longer valid. The report and other relevant engineering showings can be found in a pleading, LMS File No. 0000079345, at <https://enterpriseefiling.fcc.gov/dataentry/public/tv/pleadingDetails.html?pleadingFileNumber=0000079345>

¹⁰ See NPRM at fn. 50.

to reduce power when they propose antenna heights above a specified maximum.¹¹ a low power TV proposal in effect created the equivalent of a class C1 FM radio station. The map attached as Exhibit 2 shows vast predicted interference from the LPTV station to KKJZ, not in a fringe area but rather extending through and beyond KKJZ's transmitter site, including 79.5% of the population within the KKJZ 60 dBu protected signal contour. The application and interference showing are for a *digital* proposal by the LPTV station, not the station's current analog licensed operation.

9. What is the solution to the problem of interference from TV Channel 6 stations to NCE FM radio stations? The Commission should address the problem head on and not simply sunset all rules affecting the relationship between TV Channel 6 and FM radio stations. There are established methods of predicting adjacent channel interference, even with different signal formats. Those methods should be incorporated into the Commission's Rules for application processing. Another possibility is to condition all TV Channel 6 licenses to require protection of pre-existing FM stations in all cases and protection of all primary FM facilities in the case of new Channel 6 applications by LPTV stations, which are secondary spectrum users. In any event, ignoring the problem is not a solution.

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Respectfully submitted,



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¹¹ In contrast, FM radio stations do have to reduce ERP to compensate for antenna heights over specified limits. See 47 CFR § 73.211(b)(2).

EXHIBIT 1

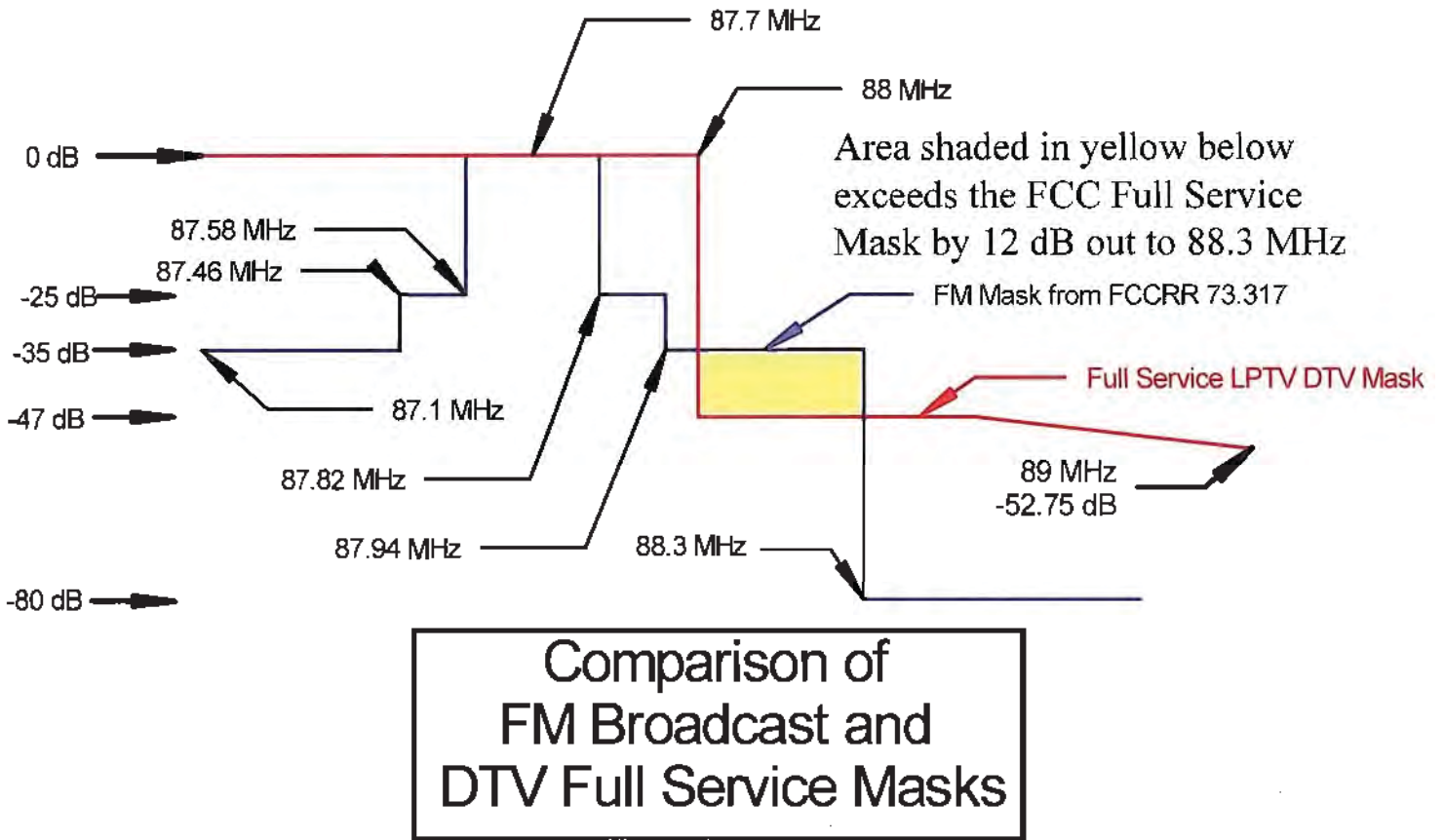
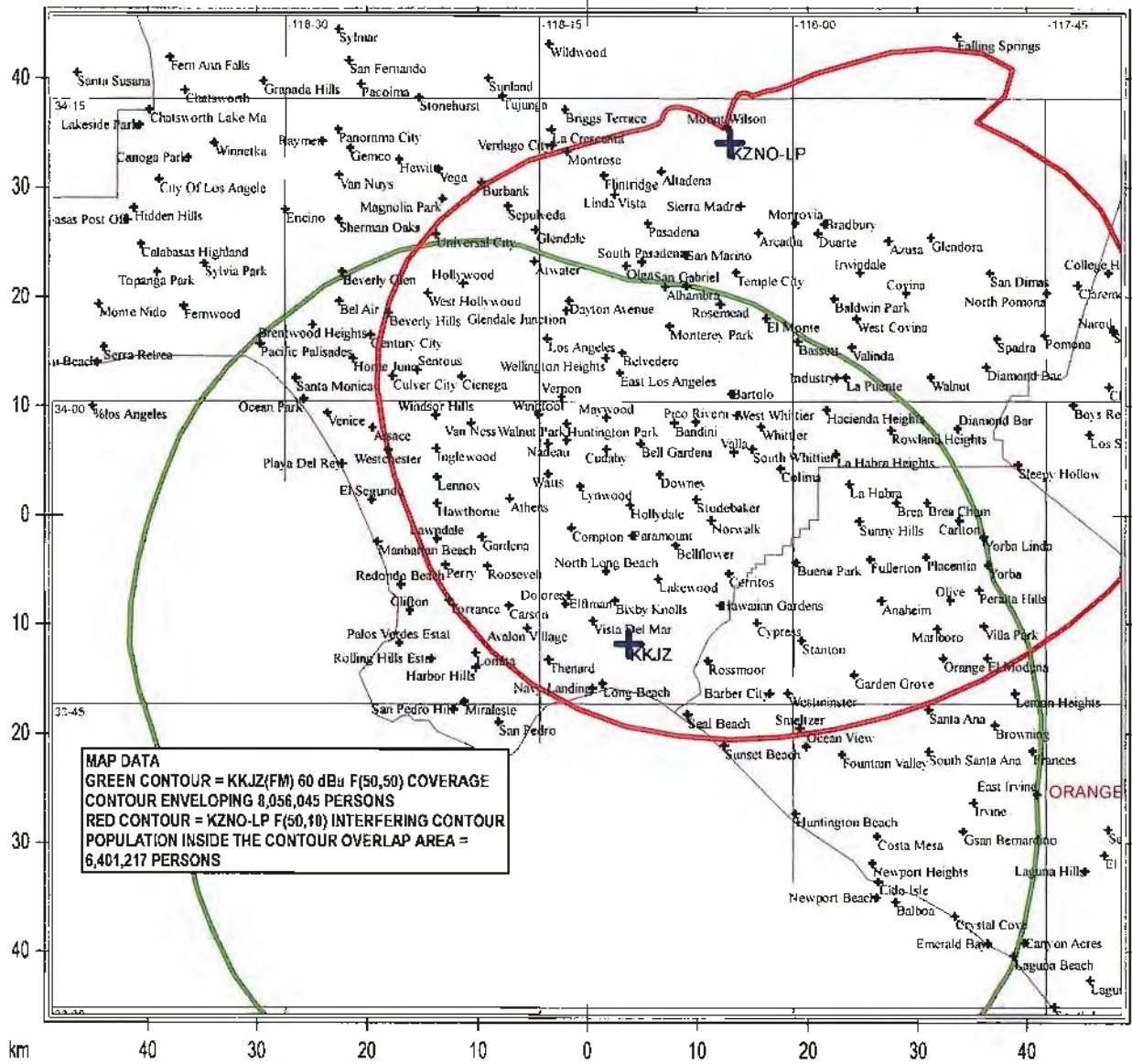


FIGURE 2

EXHIBIT 2

KZNO-LP CH 6 LPTV DTV INTERFERENCE INTO KKJZ(FM) 60 dBu LICENSED CONTOUR



Communications Technologies, Inc. Marlton, New Jersey

County Borders Lat/Lon Grid

Map Scale: 1:600000 1 cm = 6.00 km V/H Size: 91.43 x 97.37 km

Figure 1